DOCUMENT RESUME

ED 470 085 IR 021 523

AUTHOR	Gastfriend, H. Hilliard; Gowen, Sheryl A.; Layne, Benjamin H.
TITLE	Transforming a Lecture-Based Course to an Internet-Based Course: A Case Study.
PUB DATE	2001-11-00
NOTE	10p.; In: Annual Proceedings of Selected Research and Development [and] Practice Papers Presented at the National Convention of the Association for Educational Communications and Technology (24th, Atlanta, GA, November 8-12, 2001). Volumes 1-2; see IR 021 504.
PUB TYPE	Reports - Research (143) -- Speeches/Meeting Papers (150)
EDRS PRICE	EDRS Price MF01/PC01 Plus Postage.
DESCRIPTORS	Computer Mediated Communication; Conventional Instruction; *Distance Education; *Educational Change; Educational Development; *Instructional Design; *Instructional Development; Lecture Method; Nontraditional Education; Teacher Student Relationship; *Web Based Instruction; World Wide Web

ABSTRACT

The rapid increase in the use of computer technology to facilitate alternative forms of educational delivery, often called distance education (DE), represents a major change taking place in education. The potential for decoupling the traditional requirements that student and teacher be present in the same room at the same time has never been greater. Many teachers will soon decide to design, or they will be asked to design, courses for distance education in virtual environments for the first time, but they will not have many published principles to guide them. This research project describes an instrumental qualitative case study examining the process that an educator must resolve when designing a distance education course from a preexisting traditional course. The research focused on the transformation of a widely-taken, lecture-based course to a largely asynchronous, Web-based course. During this study, the principal guiding question was: What aspects of content, design, and andragogy would an instructor consider when transforming a lecture-based course to one incorporating Web-based instruction? In addition to this overarching question, a number of related questions regarding the selection of team experts and devising suitable methods for regulating student-student and teacher-student interactions were considered. A number of key themes and issues manifested themselves during the course transformation process, primarily those concerned with unexpected problems and technical difficulties, and those focused on the pedagogical novelty involved with distance education. The course displayed far fewer technical problems than anyone might have imagined. However, issues regarding teacher evaluation and the possible consequences for tenure evaluation were totally unexpected by the principals involved. The issues surrounding the newness of distance education, for both student and instructor, demonstrated enormous complexity. Pedagogical matters on how time and space affected the course, on what "interacting" means in a distance education environment, and the new varieties of limitations and constraints imposed by distance education must be considered by future distance education instructors. (Contains 14 references.) (Author/AEF)

Reproductions supplied by EDRS are the best that can be made

ED 470 085

Transforming a Lecture-Based Course to an Internet-Based Course: A Case Study

By: H. Hilliard Gastfriend, Sheryl A. Gowen & Benjamin H. Layne

PERMISSION TO REPRODUCE AND DISSEMINATE THIS MATERIAL HAS BEEN GRANTED BY

P Harris

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

1

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

IR021523

BEST COPY AVAILABLE

Transforming a Lecture-Based Course to an Internet-Based Course: A Case Study

H. Hilliard Gastfriend
Sheryl A. Gowen
Benjamin H. Layne
Georgia State University

Abstract

The rapid increase in the use of computer technology to facilitate alternative forms of educational delivery, often called distance education (DE), represents a major change taking place in education. The potential for decoupling the traditional requirements that student and teacher be present in the same room at the same time has never been greater.

Many teachers will soon decide to design, or be asked to design, courses for distance education in virtual environments for the first time, but they will not have many published principles to guide them. This research project, which represents portions of my doctoral dissertation, describes an instrumental qualitative case study examining the process that an educator must resolve when designing a distance education course from a preexisting traditional course. My research focused on the transformation of a widely-taken, lecture-based course to a largely asynchronous, web-based course.

During this study, the principal guiding question was: What aspects of content, design, and andragogy would an instructor consider when transforming a lecture-based course to one incorporating web-based instruction? In addition to this overarching question, a number of related questions regarding the selection of team experts and devising suitable methods for regulating student—student and teacher—student interactions were considered.

A number of key themes and issues manifested themselves during the course transformation process, primarily those concerned with unexpected problems and technical difficulties, and those focused on the pedagogical novelty involved with distance education.

The course displayed far fewer technical problems than anyone might have imagined. However, issues regarding teacher evaluation and the possible consequences for tenure evaluation were totally unexpected by the principals involved. The issues surrounding the newness of distance education, for both student and instructor, demonstrated enormous complexity. Pedagogical matters on how time and space affected the course, on what "interacting" means in a distance education environment, and the new varieties of limitations and constraints imposed by distance education must be considered by future distance education instructors.

Background

As we approach the new millennium, all objective signs point to the fact that education, as well as a number of other social institutions, appear to be undergoing radical transformation. These changes may involve all levels of the educational system from pre-kindergarten through higher education. Many believe that these upcoming changes will inaugurate the greatest systematic modifications since the Middle Ages, when universities shifted fundamentally from locations that congregated assemblies of great scholars and thinkers to those seeking to become great repositories of the latest technological education innovation: the printing press and books (Nyiri, 1997).

One major change taking place in education is the rapid introduction of computer-assisted educational delivery, often called distance education (DE). Other terms for distance education, such as "open learning," "distributed learning," "web-based instruction," and "flexible learning," have also been used, and these terms often compete and substitute for one another indiscriminately. Many of these terms show subtle distinctions that can best be discerned by considering the environment and the frame of reference used by the institution offering the instruction.

Regardless of the particular variety, distance education platforms all share a number of characteristics in common (Peters, 1993): (a) teachers and students are apart; (b) the learning often takes place in the home of the student; (c) the teaching-learning process often takes the form, or uses components of, independent study; (d) students do not have to cease working or interrupt their schedule while taking the course.

Our contemporary variations of distance education incorporate the newest technologies of computer networks and modern telecommunications. With the advent of these new advancements, the potential for decoupling the traditional requirements that student and teacher be present in the same room at the same time has never been greater. From an operational point of view, distance education can be thought of as a set of variations in the educational processes and technologies that take place without these conventional requirements.

Today three different types of technologies tend to dominate in distance education: videoconferencing, interactive broadcasting, and online formats. Videoconferencing and broadcasting generally require that the participants meet at the same time although the location of the participants may vary considerably—from different sites on the same campus to different cities, states, or even countries. This variety is called synchronous distance education (SDE). In the latter technology, called asynchronous distance education (ADE), the participants are constrained by neither time nor location. The increasing trend

BEST COPY AVAILABLE

among distance educators involves integrating multiple platforms to maximize the benefits of each method of delivery. This study followed a team as they developed a largely ADE course for Internet delivery.

While distance education has existed in its many forms for more than a century, it has never played a major role until recently (Barley, 1999; Martin, 1999). This may soon change since the ability to reach students previously cut off from the traditional face-to-face, lecture style of education has excited many educators and politicians alike.

The United States Department of Education recently began tracking the availability of distance education courses in higher education (Lewis, Alexander, & Farris, 1998; Lewis, Snow, Farris, Levin, & Greene, 2000). They reported that for the 1995 fall term approximately 58% of 2-year public higher education facilities and 62% of 4-year institutions offered distance education classes. Overall about 33% of institutions offered distance education courses. Their next survey covered data for post secondary education institutions for the 1997-1998 school year (Lewis, et al, 2000). Among public 2-year institutions, now 62% offered distance education courses, while public 4-year institutions offering distance education courses rose to 78%. As in the previous survey, private institutions lagged behind public institutions, with only 5% of 2-year private schools and 19% of 4-year programs offering distance education courses. The trend for increasing use of distance education in the near term is clearly escalating.

Private institutions have reacted differently from public ones. In 2year private institutions only 2% offered distance education courses, and only 12% of 4-year institutions offered distance education courses. Many of these elite campuses have taken a more selective approach and focused on specialized degree programs and curricula that can be exported to international audiences without interfering their local, on-campus strategies (Blumenstyk, 1997). As the United States currently undergoes its massive build-up in the race to embrace distance education technologies within its educational systems, questions regarding the effectiveness and best practices of distance education remain unanswered and often even unasked.

While many different forms of distance education varieties are being tried across the country, using the Internet as a delivery vehicle has become increasingly popular. In the United States, college courses have increased their use of e-mail from 8% in 1994 to 44% in 1998, and the use of other Internet resources and World Wide Web (WWW) pages for class materials also show dramatic increases (Institute for Higher Education, 1999). In 1998, the United States Department of Education found that 1,680 institutions offered 54,000 distance education courses, with 1.6 million students enrolled (Carnevale, 2000). This growth is all the more amazing when considering that, except for a small number of experimental courses, the number of such courses offered in 1995 approached zero. A probable reason for this may have been the fact that browsers and other software tools only existed in primitive forms until recently.

The true number of distance education courses offered is presently unknown, however. Criteria have yet to be established on what should be considered a distance education course. For example, in some colleges, courses simply having a syllabus available on-line would qualify as a distance education course. In the very near future, some method of assigning an approximate percentage of the course that takes place via distance education will have to be devised.

Many teachers will be designing courses for distance education environments for the first time, and they will be doing so for a variety of reasons. Some will offer their courses in this manner because it appeals to them out of curiosity or because they are personally interested in the technological innovations and want to experience them first hand. Others believe the new technologies may improve or enhance their current courses by offering students new ways of looking at, or contemplating, a problem, or a new way of thinking. Many will be offering their courses for less than optimal reasons. Administrators, desiring to reach as many students as possible, might pressure them to take their courses online. To accomplish this, they may want to add some form of distance education to supplement their traditional student base. Some administrators will want their institutions to be seen as leaders of the field or simply may not want to be seen as laggards, out-done by their competitors (Martin, 1999). Whether these teachers will be transforming their existing, traditional courses or designing new courses de integro, they often will be uncertain as how to proceed.

To many of the "early adopter" educators, those first to undertake distance education in their classes, their efforts often focus on transferring as much as possible from what they have already prepared for their traditional classes without consciously adapting their materials to these new media. While this may be an obvious first approach, it cannot be as effective as when instructors completely rethink and reevaluate the advantages and disadvantages of the new medium. The most effective distance education educators will focus on which specific distance education options are the most appropriate for their given curricula.

As part of my case study, I met and interviewed Dr. Gwendolyn and other principals throughout the course development process. I observed how she approached the transformation process and how she evaluated which changes needed to take place in the newly transformed course. I observed how and why decisions were made regarding course content, student-faculty interactions, and student-student interactions. I also followed how she interacted with the instructional technologists who helped her give shape to the on-line course in the form of text, audio, graphics, animation, and video media. I was given access to all content meetings and was allowed to observe the group decision-making process and how they delegated tasks and made assignments.

Research Overview

A department within the business school of a large southern, urban university began their experimentation of offering web-based instruction by granting Dr. Wolf release time to develop an online course. The department heads selected a graduate gateway course for the experiment, i.e., an introductory class required of all incoming graduate students within that department. The course also acts as a pre-requisite for many other graduate courses within the entire business school.

BEST COPY AVAILABLE

Cast of Characters

The primary members in this research effort included: Dr. Wolf, Dr. Gwendolyn, Dr. Summerville, Mr. Masterson, and Ms. Veritago. Each person brought unique skills to the process as tabulated below. Dr. Wolf assumed the chief responsibility for the course content and would teach the class when completed. Dr. Gwendolyn acted as team coordinator for both phases of the project as well as the instructional designer for the course. Dr. Summerville contributed greatly as a subject matter expert. Dr. Wolf, Dr. Gwendolyn, and Dr. Summerville acted as the principal content team during the development phase of the project. Mr. Masterson and Ms. Veritago joined Drs. Gwendolyn and Wolf in the second phase of the project and contributed largely as web-page designers and to web site maintenance.

The Transformation Process

In the first phase of the process, the team examined the course material for two primary considerations: the relevance of the subject matter for the current demands of the field and the suitability of the course material for use in a web-delivered environment. Drs. Wolf, Gwendolyn, and Summerville presided over this "transformation phase" of the project.

Administration

According to Dr. Wolf, his department cited several reasons for wanting to experiment with distance education within their programs. While the business college boasts an excellent reputation and usually attracts more student applications than available open slots, some problems were beginning to emerge. The reasons for undertaking the course transformation are summarized in the table below.

Table 1 Summary of Dr. Wolf's Department's Reasons for Developing DE Courses

Stakeholders	Reasons for participating in DE Courses
Students	None directly solicited
Faculty	Increasing travel demands Potential for improving courses
Administration	Perceived demand by students Increase the number of students per class Perceived competition by other college programs offering DE courses Reduce time and space constraints for students attending college courses Reduce traffic and parking congestion on campus

Students

In preparation for overseeing the transformation of the course, Dr. Gwendolyn formulated a 12-step program for implementing the transformation of the course from a lecture-based format to an Internet-based format. She relied heavily on her TWIGS (tools for web-based instruction: generating structures) concepts, generated from her previous research and experience designing distance courses, to guide Drs. Wolf and Summerville in reviewing the course materials for suitability in the new educational medium.

The TWIGS document guided the instructors to design their distance education course to the needs and requirements of the students by posing a series of questions in a number of different areas. One of the difficulties with the course in question related to the very different technological skills that students bring to the course: some are technological neophytes and others are technological experts. In general the students were pursuing their MBAs, in their twenties, worked full-time, and had several years of "real world" business experience. Some of the students would be of foreign birth and not speak English as their native language.

Instructors

For approximately five months, Drs. Wolf and Gwendolyn accepted the challenge of designing a web-based course based on a course that had been traditionally taught in a face-to-face manner. Drs. Wolf and Summerville, acting in their roles of subject matter experts, carefully reviewed every topic in past course syllabi to determine if the material continued to be necessary and vital for students in the field to understand and master. They worked with Dr. Summerville to review the content of the course and make certain each element of the syllabus remained important and relevant given the rapid changes that are taking place in real-world business environments. Under Dr. Gwendolyn's guidance, the team reviewed the course syllabus; considered under what parameters the students would access the Internet and how that might affect their course design; discussed the number and types of tests that would be used; and reviewed which communication features—synchronous, asynchronous, or both—the course would incorporate.

The principals agreed to incorporate both synchronous and asynchronous components of distance education. Dr. Gwendolyn pointed out that too much time devoted to SDE would take away many of the advantages of distance education, in general, by tethering the students to their computers at certain times. This was especially relevant to the given student population since so many of them worked full time.

BEST COPY AVAILABLE

In the process the course material underwent drastic changes. During this process, they did not take into account the suitability of the material for distance education delivery, and it fell upon Dr. Gwendolyn to accommodate as much of the content and style of presentation as possible and to let them know if she believed changes needed to be made to suit the medium.

Design Process

During the last stage of the course development, what I call the Design Process, the content of the course had already been determined, and the team now focused on how what type of course management software would be used and the graphic design and style of the web pages. Dr. Gwendolyn proposed three possible options for web course management software: use a pre-existing, off-the-shelf product such as WebCT or Blackboard.com, design a proprietary, custom-made software, or a hybrid solution of modifying the commercially available software to best suit Dr. Wolf's needs. Each option offered strengths and weaknesses. The commercial software would be the easiest to use, but it would also be the most rigid, forcing any instructor to utilize preformed templates. The proprietary software would allow instructors nearly unlimited freedom in how their course materials would be presented and how students would interact with the material, but it would be the most difficult to design, would be difficult to maintain, and would not allow other faculty members within the department an easy template to copy for their courses. Dr. Wolf decided to employ the hybrid solution as providing some flexibility but still allowing those within the department some guiding design prospects.

Dr. Gwendolyn had three main goals for her design principles for the course: (a) accommodate the instructor's style of teaching as much as possible; (b) provide a relatively easy to use model for other instructor in Dr. Wolf's department to emulate should they decide to transform classes of their own; (c) adhere to standard graphic design principles to maximize ease of reading of text and viewing of graphics.

Mr. Masterson and Ms. Veritago reviewed Dr. Wolf's class notes and PowerPoint slides and redesigned them for consistency of appearance and legibility. These style guides would apply to all documents on the web site. Dr. Wolf was pleased with the results.

The design team incorporated several features within the web page that Dr. Wolf found useful for this course and for possible improvements for future courses. They used time-sensitive coding so that answers to assignments and exercises only appeared after a given date. "Page tracking" offered the possibility of tracking which web pages were utilized by students the most. This feature offered an indirect measure of which parts of the web site the students found the most useful.

Attempts to have outside evaluators review the web site did not produce as much information as hoped for. Dr. Summerville's face-to-face class looked at the course prototype but only provided a small number of comments. Other instructors in other institutions had agreed to review the website but because of time conflicts only provided very basic comments.

Discussion

As long as I've got an IP connection, I've got a classroom.
—Dr. Summerville

This stuff will eat you alive—if you let it.
—Dr. Gwendolyn

A number of key themes and issues manifested themselves during the course migration process, and I have grouped them into two categories: those concerned with unexpected problems and technical difficulties, and those focused on the pedagogical novelty involved with distance education.

Technical Difficulties

The course displayed far fewer technical problems than either Dr. Gwendolyn or Dr. Wolf imagined—they both expected far worse and doubted other instructors would be so fortunate. The one major problem of students being kicked off the chat room site when another student entered continued throughout the term was never resolved. For the next term, Dr. Wolf ported the course into WebCT, and the problem never recurred.

Instructor Evaluations and Tenure

As with many other universities, Dr. Wolf's department uses student evaluation of instructors as part of their protocol for determining academic tenure. His particular department makes use of a series of questions that students rank on a 5-point scale, with one being the lowest score and five the highest score. Dr. Wolf was surprised by the relatively negative student evaluations he received at the end of the course. His scores averaged 0.5 points lower than his usual scores. While many of these comments might be attributed to the fact that he was teaching the course for the first time, it is equally possible that many of his low scores might be attributed to the fact that the students were given a traditional, face-to-face instructor evaluation form to fill out. The form contained a number of inappropriate questions that might have confused the students or possibly caused them to give less careful consideration to the process than they might have under different circumstances. For example, Question 4 asks if the instructor "is accessible to students out of class," and Question 6 asks if the instructor "speaks in a manner that is easy to understand." While only a handful of the 37 questions appearing on the evaluation form might be considered totally irrelevant, more than one-third of the questions have either little relevance to courses taught at-a-distance or would have to be modified or clarified in some manner to better accommodate the circumstances involved in the new environment.

BEST COPY AVAILABLE

Dr. Gwendolyn's department, at her university, requires that she use traditional evaluation forms for her online classes, but she augments that data by asking her students to fill out an evaluation form of her own design. This simple solution might have salvaged a better review for Dr. Wolf and made the entire experience more rewarding for him.

As a by-product of the instructor evaluation disappointment, Dr. Wolf raised the issue of tenure evaluation. As an assistant professor, Dr. Wolf felt he must keenly focus on areas related to tenure. The department establishes requirements for tenure, some of which are explicitly recorded and some that are more nebulous and subjective. Since teaching distance education courses generally requires more effort than traditional courses, yet does not generate extra rewards for that effort, Dr. Wolf decided he no longer wanted to teach them at this stage in his career. He felt the potential for lower evaluations could not justify the extra effort involved. Dr. Wolf thought the department should offer bonuses, in the form of release time or other similar benefits, to instructors offering to teach online.

Intellectual Property Rights

While the debate over who owns the rights to distance education courses rages on in a number of universities (Noble, 1998a), only one of the principals, Dr. Summerville, voiced any concern over the controversy. Neither Dr. Wolf nor Dr. Gwendolyn expressed the slightest concern over the matter, but I believe the subject should be discussed and given careful consideration. At the present time, the issue may not be that important since most of the instructors involved in distance education pursue distance education for their own interests and curiosities. However, as the push towards distance education continues, and universities become more insistent that their instructors offer distance education courses, the matter might not be so benign.

Thus, while the issues of intellectual property rights and ownership have not played a role in the current course transformation, I believe it is an issue of extreme importance. Future distance education instructors may wish to investigate this matter when the time comes for their initiation into teaching at-a-distance.

Redefining Time and Space Within a Distance Education Environment

As stated earlier, distance education can be thought of as a set of educational policies and technologies that allow both the student and instructor to be separated in time, space, or both time and space. The process of transforming this graduate course involved a number of stages, and many of them related to issues of time and space, either directly or indirectly. While many might think the boundary between time and space as quite distinct, the two dimensions can actually be considered intertwined. For example, when a student complains of the requirement of traveling to a local college campus to attend a class, seemingly a "space" demand, part of the complaint actually embeds the time required for the journey: the actual travel time, time spent searching for parking, and time spent walking to the classroom building. Thus, just as these two dimensions are mutually linked in the concept of a space-time continuum in high-level physics, these two attributes appear to be conjoined in the everyday world as well.

While the official reasons for wanting to transform courses were largely administrative and financial, students and instructors generally hold other motivations for being involved with distance education, particularly those associated with convenience in space-time. As mentioned above, older students, or those married with families, often need flexibility while scheduling classes. In fact, without the option of controlling their course scheduling requirements, they may not be able to take part in degree programs. But the issues of space-time relating to distance education go beyond simply whether a student can attend a class at a given time. In addition to simply "showing up," students have always had to complete homework, exercises, and class projects; participate in class discussions; and communicate with the instructor and with other students. Most (if not all) of these items will still have to be successfully navigated in a distance education environment and will be complicated by the constraints of the new medium.

Instructors may have an even more demanding reliance and dependence on space-time issues than do the students. As reported earlier, instructors in Drs. Wolf and Summerville's department must travel frequently, often disrupting their teaching schedules. When Dr. Summerville heard about the amount of time Dr. Gwendolyn spent in reading student communications, he considered the continuous servicing of the online site a form of "electronic tether." This seemed quite ironic since one of his main reasons for exploring distance education courses was the opportunity of breaking the tether of the physical space of the classroom. ("As long as I've got an IP connection, I've got a classroom.") Would distance education simply substitute the time tether for the space tether rather than eliminating the tether concept altogether?

The issues surrounding the novelty of distance education, for both student and instructor, demonstrated enormous complexity. Pedagogical matters on how time and space affected the course, on what "interacting" means in a distance education environment, and the new varieties of limitations and constraints imposed by distance education must be considered by future distance education instructors.

Preparing Students for Distance Education

While this research project specifically focused on what types of preparations an instructor might need to take into account in transforming a class, the needs of the student must also be taken into account for any distance education course to be considered successful. Dr. Gwendolyn often referred to the idea that first-time distance education students were "learning how to be different types of learners." Dr. Wolf also commented on how he had lost sight of the students' sense of being novices with taking distance education courses during part of his preparations and implementations for some classes.

While the idea of preparing some type of primer or manual for novice distance education students surfaced on a number of occasions, Dr. Wolf's team did not prepare or distribute such a manual for the students before the course began. The purpose of such a document would be to alert the students to some of the differences in taking a distance education course versus traditional

course, This oversight did not emerge as an issue during the "postmortem" interviews after the course ended, and it only occurred to me during the write-up phase of the research that there were plans for such a document.

Departments, colleges, or universities desiring to expand their traditional base of students and enter into the world of distance education might consider publishing and making such documents readily available, even before the class begins. As one example, Pennsylvania State University's online program offers online tutorials and suggestions for students to determine if they might be could candidates for distance education courses as well as ways to prepare for online instruction. Students would perform better if explicitly told of the different nature of the demands placed on them in these new environments, and it would help any instructors considering such course transformations, as well.

The new and different learning styles required of students taking distance education courses might be thought of, in some manner, as different ways of conceptualizing and managing time. Dr. Gwendolyn pointed out that people in our culture possess an almost innate understanding of what it means to "go to school" in the sense of knowing the requirements of physically going to the campus, attending class, taking notes, studying for and taking exams, etc. As with all novel ideas, concepts involved in taking a distance education course will have to become learned, and this must occur over time. Many of these concepts involve time, for example, remembering to turn on the computer at a certain time (for a synchronous session); remembering to regularly check the web site for any changes, corrections, or updates; remembering to regularly post to bulletin boards; etc.

Limitations and Constraints in Distance Education Environments

To many educators, distance education offers unparalleled freedom of choices, with untapped or previously unavailable populations of students taking their courses whenever their schedules allow. However, in preparing this particular course for teaching at-a-distance, the opposite situation, problems of constraints and limitations, often arose. The first set of constraints arose because the course was being taught in the summer-shortened semester. Instead of the more luxurious 16-week term, which might have allowed for a more gradual roll-out of the online course, Dr. Wolf was faced with an 8-week course that immediately required his students to double up on their weekly lectures and quickly adapt to the new learning medium. The shortened semester also presented difficulties in setting up the chat room sessions and forced Dr. Wolf to hold both sessions on the same day. While undertaking a course transformation would be considered trying under even benign circumstances, the difficulties in scheduling, planning, and preparing a course syllabus were magnified by the limited time available in a shortened semester. Simply doubling the course meeting time in a semester half the usual length can never guarantee results equal to that of a normal semester. For example, some courses with large reading requirements may not afford the students ample opportunity to reflect over what they have read. The extra weeks of a semester might be critical for true understanding of the materials presented.

Dr. Gwendolyn spoke of the time requirement needed for people to adjust to the new expectations and procedures in distance education courses, for both students and instructors. In this case, a full semester might have also given the students more time to adjust to the new learning methods and techniques required in distance education environments. If they had been more comfortable in their new environment, they might have been more generous in their course evaluations.

Even within the structure of a longer term, the freedom promised by distance education must not be regarded as a panacea for all circumstances. Dr. Gwendolyn recounted an interaction with a student who had been commenting that he took the distance education course because he thought it would be the best choice to accommodate to his heavy business travel schedule. Instead he ended up with a course that required a great deal of student input on a regular basis. He thought it was the most restrictive class he had ever taken rather than the most liberating. Perhaps if he had taken the same distance education course offered by another professor, he would have been able to travel on business and complete the course without as much difficulty.

As the number and availability of distance education courses increase in the future, the full range of offerings might one day rival those available with traditional classes. Perhaps the description of a particular distance education course might include the type of information that would have aided the student in the example above and that type of unexpected difficulty might be avoided.

Other constraints revolved around the discussion of technological access to the Internet. Drs. Wolf and Summerville wanted to include some types of video clip formats for their course, but using video required high-speed Internet access, which was not available to most students. They had to make certain that any features incorporated into their web pages could accommodate the lowest common denominator of access, which amounted to using a modem set at 30 kps (kilobytes per second). Using such a slow value of 30 kps as a general standard might surprise some readers, since the vast majority of people have access to 56 kps modems. A number of smaller calling areas, however, still limit access to 28.8 kps, and 30 kps was taken as an average. As forms of high-speed access become more readily available, this constraint will be lifted.

Relevance of Andragogy and Change Theory in Distance Education

Early in the research process, I proposed that Malcolm Knowles's (1977, 1980, 1984) theory of andragogy might provide the most reasonable theory to frame this case study research. Dr. Wolf, based on this distance education class experience and with those of past classes, confirmed the majority of Knowles's description of the adult learner. Knowles's last assumption concerns motivation for learning, and in this case, Dr. Wolf's students did not adhere strictly to an adragological framework. Knowles presumed that internal motivational forces of self-esteem, self-actualization, and recognition would provide greater incentives than the external motivators of job success and financial reward. This might reflect Knowles's work environment while he was developing his theories, in that he was in largely involved with what would be called today "continuing education." For the course involved in this research, while internal motivators played an active role, most of the students were driven by external, career factors.

While Knowles's theory of andragogy may not be the best available theory to study and investigate distance education, another possible candidate might exist: change theory. In his 1999 address at Northwestern State University of Louisiana, Fuller addressed the need for considering a new cultural transformation and reeducation of adherents for distance education to succeed (Fuller, 1999). Relying on two notable historians of science, Thomas Kuhn and Kurt Lewin, Fuller proposed ideas for effecting systemic change in educational institutions noted for gradualism and continuous change.

Fuller believed that the role of technology had less to do with the curriculum of a subject taught online than did the actual underlying culture that taught online. He did, however, acknowledge the new role technology played between "instructor and instruction," and realized the differences among all participants in the new era of distance education, including trust between instructors and administrators:

> The commitment to distance education, as a new paradigm of instruction, requires a commitment to understanding the rules of instruction differently within the new dispensation. It requires commitment on the part of the faculty and institution, and implies a willingness to reveal much—perhaps to risk much—on the part of the faculty members participating in the project. (p. 5)

Reigeluth and Garfinkle (1994) also addressed the issue of systemic change within educational systems. They stressed the needs for seeking out new ways of thinking in battling the problems facing education. They also voiced concern over the intricacy that incorporating systemic thinking involves:

> Systemic thinking is also difficult. It requires keeping many aspects of the problem set in your head at one time. It is a community activity, not an individual one, with all the requisite challenges of any group task. Like design, system thinking demands persistence, because to think systemically means to constantly reflect back to previous assumptions, and to be flexible enough to change thinking that has been agreed upon previously. (p. v)

Flexibility appears to be a common theme among all researchers. Fuller embraced Lewin's theory of reeducation in the sense that basic human behaviors must change, and these changes cannot be gradual, whether in learning or training settings. For Lewin, reeducation involves a three step pattern by which old behaviors "unfreeze," change occurs, and the new behaviors "refreeze." This can only occur in a safe environment.

Dr. Wolf's experiences allude to the required safe environment for novice distance education instructors. In some sense, he trusted the departmental administrators to make allowances for his first venture into teaching at-a-distance. While he did not specifically mention how the department responded to his lower student evaluations, his decision to opt out of teaching future distance education courses appear to indicate they did not immediately allay his fears about how those evaluations might affect his position within the department.

While the changes between student and instructor may be the most obvious, perhaps more important are the changes required between the instructors and the administration (or institution, as Fuller wrote). Fuller concludes his speech with the following challenge:

Distance education requires a thoroughgoing change in the classroom and the campus. In some ways, the computers are the least of the revolution. The fundamental relationship among professor, the learner, and the institutions of higher learning are all on the line today. New models of classroom instruction are everywhere. It's time to test new ways that scholars can prepare themselves—to prepare each other and their institutions—to thrive in the new world. (p. 11)

Concluding Remarks

This study presented the experiences of one group of instructors as they transformed a traditional, face-to-face course to an Internet-based, distance education course. I tried to present as detailed and "thick" a description of the process as possible so that others interested in the prospect of transforming their own courses might understand the process as completely as possible. In the process, I uncovered a number of themes and concepts that I believe transcend the issues of this single case study and would be relevant to all distance education instructors.

By its very nature, distance education distorts and amplifies differences in the concepts of time and space. Nearly all of the key themes and concepts examined during this research reflected relationships of how people either reacted to or planned to account for variations in these two dimensions when compared to traditional, lecture-based education. Attending class; communicating, both in class as well as outside of class; compensating for the loss of verbal and nonverbal cues and body language; and the general issues relating to constraints and limitations within the confines of distance education can be attributed to these key concepts.

At the outset of this undertaking, I originally thought that Knowles's theory of andragogy would be the most suitable theoretical framework to support this research. I now do not believe this original assessment to be accurate. I think an investigation of change theory as applied in educational environments might be a much better framework for understanding the different processes that concurrently take place at the time of transition from traditional modes of instruction to distance educational practices.

All educators should be aware of the changes taking place in distance education, if not for their immediate teaching efforts, then for the necessity of observing the changes affecting their communities. A case study, no matter how thorough, can never hope to capture the ultimate answer of any research question—it can only hope to accurately portray what occurred in this one instance. I hope that this research effort will motivate and inform other novice instructors interested in using distance education in their teaching efforts. Additional research into the discovery of the best methods for transforming and adapting to this new environment must be forthcoming among all stakeholders in higher education.

References

Barley, S. R. (1999). Computer-based distance education: Why and why not. Education Digest, 65(2), 55-59.

Blumenstyk, G. (1997). Some elite private universities get serious about distance learning. Chronicles of Higher Education, 43(41), A23-A24.

Carnevale, D. (2000). Survey finds 72% rise in number of distance-education programs. The Chronicle of Higher Education, 46(18), A57.

Fuller, F. (1999). Web instruction as cultural transformation: A reeducation model for faculty development. Paper presented at the Annual Research Day of the Northwestern State University of Louisiana, April 14, 1999, p. 1-12.

Institute for Higher Education (1999). Distance Learning in Higher Education. Washington, DC: Council for Higher Education Accreditation.

Knowles, M. S. (1977). A history of the adult education movement in the United States. Huntington, N.Y.: R. E. Krieger Pub. Co.

Knowles, M. S. (1980). The modern practice of adult education : From pedagogy to andragogy. Chicago : Follett Publishing Co.

Knowles, M. S. (1984). The art and science of helping adults learn. In Andragogy in action: Applying modern principles of adult learning (pp. 1-21). San Francisco: Jossey-Bass Publishers.

Lewis, L., Alexander, D., & Farris, E. (1998). Distance education in higher education institutions: Incidence, audiences, and plans to expand (Issue Brief NCES 98-132). Washington, DC: United States Department of Education, Office of Educational Research and Improvement.

Lewis, L., Snow, K., Farris, E., Levin, D., & Greene, B. (2000). Distance education in higher education institutions: Incidence, audiences, and plans to expand (Issue Brief NCES 2000-013). Washington, DC: United States Department of Education, Office of Educational Research and Improvement.

Martin, W. A. (1999). Being there is what matters. Academe,85(5), 32-36.

Noble, D. (1998a). The coming battle over online instruction. Retrieved September 1999 from the World Wide Web: communication.ucsd.edu/dl/ddm2.html

Nyiri, J. C. (1997). Open and distance education in an historical perspective. European Journal of Education, 32(4), 347-357.

Peters, O. (1993). Understanding distance education. In H. Keith, M. John, & D. Keegan (Eds.), Distance education: New Perspectives. London: Routledge.

Reigeluth, C. M., & Garfinkle, R. J. (1994). Systemic Change in Education. Englewood Cliffs, NJ: Educational Technology Publications, Inc.

BEST COPY AVAILABLE

U.S. Department of Education
Office of Educational Research and Improvement (OERI)
National Library of Education (NLE)
Educational Resources Information Center (ERIC)

NOTICE

Reproduction Basis

[X] This document is covered by a signed "Reproduction Release (Blanket)" form (on file within the ERIC system), encompassing all or classes of documents from its source organization and, therefore, does not require a "Specific Document" Release form.

[ ] This document is Federally-funded, or carries its own permission to reproduce, or is otherwise in the public domain and, therefore, may be reproduced by ERIC without a signed Reproduction Release form (either "Specific Document" or "Blanket").